CLAIMS

1. A method of transmitting data in a borehole, the method comprising providing an electric signal representative of the data to be transmitted, converting said electric signal into a sonic signal and propagating said sonic signal along an elongate member, said data being transmitted from one side to the other of a physical obstruction in said elongate member, the conversion of the electric signal into the sonic signal being effected at a location on said one side; characterised in that said sonic signal is converted into an electrical signal on said other side of said obstruction and said data is stored on said other side for subsequent retrieval.

2. A method according to claim 1, in which the subsequent retrieval is effected by a pick-up tool lowered down the borehole to a location adjacent the obstruction.

3. A method according to claim 1, in which conversion from the electric signal to the sonic signal includes digital modulation of a carrier frequency in the range 100 Hz to 10 kHz.

4. A method according to claim 1, in which the sonic transmission is effected by longitudinal vibration.

5. A method according to claim 1, in which the elongate member is a drill stem, the obstruction is a shut-in valve in the drill stem, and the data

comprises pressure-versus-time in the drill stem beneath the shut-in valve.

6. Apparatus for transmitting data in a borehole, the apparatus comprising a transmitter and a receiver; the transmitter including means for converting data parameters into an electric signal and first transducer means responsive to said electric signal to generate an acoustic signal, the first transducer means being adapted for physical coupling to an elongate member extending along the borehole whereby the acoustic signal is propagated in said elongate member; the receiver comprising second transducer means adapted for physical coupling to said elongate member to produce an electrical output corresponding to said acoustic signal, and signal processing means connected to receive said output and operative to process the data into a condition for onward transmission; characterised in that said signal processing means includes memory means for storing received data, and means for transferring data from the memory means to a pick-up tool lowered to an adjacent location in the borehole.

7. Apparatus according to claim 6 for use in transmitting data from one side to the other of an obstruction in said elongate member, the first transducer means being coupled, in use, to the elongate member at a location on said one side of the obstruction, and the second transducer means being coupled, in use, to the elongate member at the other side of the obstruction.

8. Apparatus according to claim 6, in which the first transducer means is a magnetostrictive transducer adapted to be mounted to the elongate member to produce longitudinal sonic vibrations in it.

9. Apparatus according to claim 7, in which the data parameter converting means is a fluid pressure transducer for monitoring fluid pressure below said obstruction.

10. Apparatus according to claim 6, in which said second transducer means comprises a mechanical bandpass filter and a piezoactive element mounted in series on the elongate member.

11. Apparatus according to claim 6, in which the signal processing means includes electronic filter means.

12. Apparatus according to claim 6, in which the pick-up tool includes further memory means in which the data may be stored until the pick-up tool is returned to the surface.

13. Apparatus according to claim 6, in which the pick-up tool includes means for transmitting the data to the surface via a cable.